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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/905,037	07/13/2001	Zine Eddine Boutaghou	STL 9721	2226

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Seagate Technology LLC  
Intellectual Property Department  
7801 Computer Avenue  
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Bloomington, MN 55435

EXAMINER
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VINH, LAN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/905,037

Applicant(s)

BOUTAGHOUE, ZINE EDDINE

Examiner

Lan Vinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) 10-13, 16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 14, 15, 18, 19 and 21 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Drawings*

1. The drawings were received on 4/14/2005. These drawings are 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 5-9, 14-15, 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Wakabayashi et al (US 5,316,640)

Wakabayashi discloses a method for fabricating micro lens comprises the steps of:

forming/positioning a patterned resist mask layer 14 over the structure/device 11, wherein the mask 14 exposes a surface of the device (col 3, lines 52-58, fig. 1(c))

ion beam etching to etch the pattern into a surface of the structure/device 11 to form a feature, the feature includes at least three sidewalls and a round edge between the surface of the device and all of the sidewalls in the pattern feature (col 4, lines 42-45, fig. 1(e), the top view of fig.1(e) would have shown the feature includes at least three sidewalls and a round edge between the surface of the device and all of the sidewalls in the pattern

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Regarding claim 2, Fig. 1(e) also shows the rounded edge/arcuate edge extends along one of the three sidewalls of the device

Regarding claim 5, Fig. 1(e) shows the ion etching step forms an island, the three sidewalls located on an edge of the island

Regarding claims 6-9, Fig 1(b) and 1(c) shows the patterned mask is formed with variable spacing to produce the rounded slope and varied rounded slopes, the mask is formed with spacing that are closer near the surface of the device and more widely spaced near the sidewall

The limitations of claims 14-15 have been discussed above

Regarding claim 18, Wakabayashi discloses the step of forming/applying resist mask layer 14 to the surface of the substrate/device (col 3, lines 56-57)

Regarding claim 19, Wakabayashi discloses that the substrate comprises two layers (fig.1(a)). Fig. 1(e) shows that the ion milling step etches into one layer of the substrate

4. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Koumura et al (US 5,456,789)

Koumura discloses a method for fabricating curved surface comprises the steps of:

forming/positioning a patterned resist mask layer 17 over the structure/device 16, wherein the mask 17 exposes a surface of the device (col 5, lines 15-18, fig. 5(a))

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etching to etch the pattern into a surface of the structure/device 16 to form a feature, the feature includes at least three sidewalls and a round edge between the surface of the device and all of the sidewalls in the pattern feature (col 6, lines 15-20, fig. 5(c), the top view of fig. 5(c) would have shown the feature includes at least three sidewalls and a round edge between the surface of the device and all of the sidewalls in the pattern

Regarding claim 2, Fig. 5(c) also shows the rounded edge/arcuate edge extends along one of the three sidewalls of the device

Regarding claim 3, Koumura discloses forming an opening in the substrate (col 7, lines 31-33)

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wakabayashi et al (US 5,316, 640) in view of Koumura et al (US 5,456,789)

Wakabayashi method has been described above. Unlike the instant claimed invention as per claim 3, Wakabayashi fails to disclose forming an opening in the device

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Koumura discloses a method for fabricating curved surface comprises the steps of forming an opening in the substrate (col 7, lines 31-33)

Since Wakabayashi is concerned with a method of forming microlens, one skilled in the art at the time the invention was made would have found it obvious to modify Wakabayashi by forming an opening in the substrate to form microlenses as taught by Koumura (col 7, lines 35-40)

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wakabayashi et al (US 5,316, 640) in view of Brand et al (US 5,853,959)

Wakabayashi method has been described above. Unlike the instant claimed invention as per claim 19, Wakabayashi fails to disclose that the device is a slider for a disc drive

Brand discloses a method a fabricating contoured surface to form a slider (see abstract)

Since Wakabayashi discloses the step of ion etching a mask pattern, one skilled in the art at the time the invention was made would have found it obvious to have employed Wakabayashi ion etching step to form a slider in view of Brand because Brand discloses that the slider surface is to be milled with a single mask pattern (col 7, lines 1-3)

***Allowable Subject Matter***

8. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 4, the cited prior art of record fails to disclose the step of inserting a mating element into the opening on the device such that the rounded edge formed during the etching step permits the mating element to be inserted into an opening in the device without fracturing the device, in combination with the rest of the limitations of claim 4.

***Response to Arguments***

9. Applicant's arguments filed 4/14/2005 with respect to claims 1-3, 5, 6-9, 14-15, 18-19 have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is

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filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Vinh whose telephone number is 571 272 1471. The examiner can normally be reached on M-F 8:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571 272 1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



LV

June 24, 2005